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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,449	10/30/2003	Sridhar Gollamudi	LUCW-0008/FLE Gollamudi 7	7972
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EXAMINER				
MEHRA, INDER P				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/697,449

**Applicant(s)**

GOLLAMUDI ET AL.

**Examiner**

INDER P. MEHRA

**Art Unit**

2617

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 3/28/05.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This office action is in response to application dated: 10/30/2003. Based on this application, claims 1-23 are pending.

***Information Disclosure Statement***

2. The information disclosure statement filed 3/28/05 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because documents under “Foreign Document” and “Non-Patent Literature” have not been provided by applicant. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

***Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-11, 14-18 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reudink et al** (US Pub. No. 20040235527), hereinafter, Reudink in view of **Walton et al** (US Patent No. 6,744,743), hereinafter Walton.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

For claims 1, 9 and 16, **Reudink** teaches that a communication system (**Abstract and figs. 1, 2A-2D, 3A-3C and 4, paragraph 0014**) ,comprising:

a beam former (**paragraphs 0052 and 0054**) that is adapted to provide a plurality of beams (**multiple antenna beams, abstract, paragraphs 0014 and 0092**), each of the plurality of beams providing communication for a corresponding coverage envelope (**coverage in area 360, paragraph 0014**), the plurality of coverage envelopes comprising at least one pair of overlapping coverage envelopes (**overlapping, paragraph 0014**) and at least one pair of non-overlapping coverage envelopes ( **non-overlapping, paragraphs 0014**); and

the scheduler being adapted to assign the same system resources from the group of shared system resources for use during a simultaneous data transmission to a receiver in each of the coverage envelopes that comprises the at least one pair of non-overlapping coverage envelopes (**use of CDMA to code share a single resource among multiple users, refer to paragraph 0052**);

non-overlapping coverage envelop, (non-overlapping antenna beams to provide directional wireless signal coverage, **refer to paragraph 0014 and abstract**); (**Note: Reudink uses a code as a single source to multiple users who may at different coverage areas.**)

**Reudink does not teach explicitly the following limitations, which are disclosed by Walton, as follows:**

a scheduler (**schedule terminals and assign channels, paragraph 0118**) that assigns system resources from a group of shared system resources to a plurality of receivers distributed throughout the coverage envelopes (**scheduling of resources by using Code Division Multiplexing, paragraph 0061**),.

It would have been obvious to the person of ordinary skill in the art at the time the invention to use a scheduler that assigns system resources from a group of shared system resources to a plurality of receivers distributed throughout the coverage envelopes, as taught by Walton. The combination of non-overlapping coverage area with sharing of resources can be implemented by Base Station. The motivation for using this capability is to achieve increased capacity and/or desired levels of throughput, quality of service.

For claims 2, 10 and 17, **Reudink in view of Walton teaches all the limitations of subject matter and ,further, teaches**, "The communication system set forth in claim 1, wherein the communication system comprises a fixed beam network", (**Fixed Beam Arrays, paragraph 0050**).

For claims 3, 11 and 18, **Reudink in view of Walton teaches all the limitations of subject matter and Reudink, further, teaches**, The communication system set forth in claim 1, wherein the group of shared system resources comprises a group of channelization codes, (**Reudink teaches channels to allow code sharing of RF channels, paragraph 0025**).

For claim 14, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to, The method set forth in claim 9, comprising, and Reudink, further, teaches**, " the act of

transmitting data to at least a subset of the plurality of receivers according to a code division multiple access (CDMA) communication protocol, (**CDMA communication channels to allow code sharing of RF channels among multiple users, refer to paragraph 0025).**

For claims 5 and 20, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to**, The communication system set forth in claim 1, comprising: at least one antenna for transmitting communication signals to and receiving communication signals from the plurality of receivers, (**Reudink teaches, “multiple antenna beam remote stations”, abstract).**

For claims 6 and 21, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to**, The communication system set forth in claim 1, wherein the communication system comprises a cellular telephone base station, (**Reudink teaches, “cellular communication system including Base Station”, refer to paragraph 0008 and fig. 2A).**

For claims 7 and 22, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to**, The communication system set forth in claim 1, wherein the communication system comprises a code division multiple access (CDMA) cellular telephone base station. , (**Reudink teaches, “CDMA cellular communication system including Base Station”, refer to paragraph 0009 and fig. 2A).**

For claims 8, 15 and 23, **Reudink in view of Walton teaches all the limitations of subject matter, as applied to**, claims 1, 9 and 16 respectively, with the exception of following limitations, which are disclosed by Walton, as follows:

wherein the scheduler prioritizes the plurality of receivers based on at least one scheduling priority metric prior to assigning resources from the group of shared system resources, **(scheduling of receivers based on priority metric, col. 28 line 62 through col. 29 lines 27),.**

It would have been obvious to the person of ordinary skill in the art at the time the invention to use a scheduler prioritizes the plurality of receivers based on at least one scheduling priority metric prior to assigning resources from the group of shared system resources, as taught by Walton. The capability can be implemented by Base Station. The motivation for using this capability is to achieve increased capacity and/or desired levels of throughput, quality of service.

5. Claims 4, 12-13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reudink** in view of **Walton** and , further, in view of **Wiedeman et al** (US Pub. No. 2002/0039900), hereinafter, **Wiedeman**.

For claims 4, 12-13 and 19, **Reudink** in view of **Walton** teach all the limitations of subject matter , as applied to, “The communication system set forth in claim 1, **Reudink**, further, teaches, “wherein the scheduler” **(use of CDMA to code share a single resource among multiple users, refer to paragraph 0052)**; maintains a list of the group of shared system resources, **(see claims 4, 12-13 and 19), (available resources, paragraph 0067, 0018-0019 and 0052);** and

**Reudink in view of Walton do not teach the following limitations, which are disclosed by Wiedeman, as follows:**

“updates the list as shared system resources are assigned to the plurality of receivers”, **(updated system resources information, paragraph 0181).**

It would have been obvious to the person of ordinary skill in the art at the time the

invention to use updated list of resources, as taught by **Wiedeman**. The updated list of resources can be implemented by Base Station. The motivation for using this capability is to achieve increased capacity and/or desired levels of throughput, quality of service.

### ***Prior Art of Record***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Chan et al** (US Pub. No. 2006/0271704) discloses approach to minimize worst-case queuing delay for a switching communication system with transmission constraints.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **INDER P. MEHRA** whose telephone number is (571)272-3170. The examiner can normally be reached on Monday through Friday from 8AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Inder P Mehra  
Examiner  
Art Unit 2617

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/Joseph H. Feild/  
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